I CLAIM:

1. A common-mode detector, comprising:

a first difference amplifier that is connected to compare a first input voltage with a feedback voltage to provide a first result;

a second difference amplifier that is connected to compare a second input voltage with said feedback voltage to provide a second result;

a feedback amplifier that is connected to drive said feedback voltage to a level that is substantially the average of said first and second input voltages in response to receiving said first and second results.

2. The detector of claim 1, wherein said feedback amplifier comprises:

an operational amplifier having inverting and non-inverting inputs to receive said first and second results, respectively.

3. The detector of claim 1, wherein said first and second difference amplifiers comprise:

first and second differential transconductance amplifiers, respectively.

4. The detector of claim 3, wherein said first transconductance amplifier comprises:

first and second outputs coupled to said inverting and non-inverting inputs, respectively, so that said first output provides current I_P and said second output provides current I_N according to

$$I_P = I_O/2 + \alpha(V_P - V_N)$$

$I_N = I_O/2 - \alpha(V_P-V_N)$

wherein I_o is a bias current, V_P is said first input voltage, V_N is said feedback voltage, α is a gain coefficient of said first differential transconductance amplifier and I_P and I_N comprise said first result.

5. A common-mode detector, comprising:

an op-amp having inverting and non-inverting inputs and a detector output;

first and second differential transconductance amplifiers, said differential amplifiers each having:

a first input;

a second input coupled to said detector output;

a first output coupled to said inverting input; and

a second output coupled to said non-inverting input;

wherein, in response to receiving a differential signal at said first inputs, said detector is operable to provide a detector output indicative of a common-mode component of said differential signal.

6. The detector of claim 5, wherein said first differential transconductance amplifier further comprises:

first and second transistors each having a collector coupled to said inverting and non-inverting inputs, respectively.

7. The detector of claim 6, further comprising:

a first current source coupled to emitters of said first and second transistors.

8. The detector of claim 7, further comprising:

an emitter degeneration resistor coupled between said current source and each of said emitters.

9. The detector of claim 5, further comprising:

a first impedance coupled between a reference voltage and each of said inverting input and first outputs.

10. The detector of claim 9, further comprising:

a second impedance coupled between said reference voltage and each of said noninverting input and said second outputs.

11. The detector of claim 10, wherein said first and second impedances comprise first and second resistors, respectively.

12. The detector of claim 5, wherein said first differential transconductance amplifier further comprises:

first and second transistors with their output collectors coupled to said first and second outputs, respectively, and their bases to said first and second inputs, respectively;

so that said first differential amplifier is operable to receive said detector output and a first side of said differential signal.

13. The detector of claim 12, wherein said second differential transconductance amplifier further comprises:

third and fourth transistors with their output collectors coupled to said second and first outputs, respec-

tively, and their bases to said second and first inputs, respectively;

so that said second differential amplifier is operable to receive said detector output and a second side of said differential signal.

14. The detector of claim 13, further comprising:

a current source coupled to emitters of said third and fourth transistors.

15. A method of measuring a common-mode component of a differential signal, comprising:

converting a voltage differential between a non-inverting side of said differential signal and a feedback signal to a first differential current signal;

converting a voltage differential between an inverting side of said differential signal and said feedback signal to a second differential current signal; and

comparing said first and second differential current signals to generate said feedback signal, so that said feedback signal settles to a voltage indicative of the common-mode component of said differential signal.

16. The method of claim 15, wherein said comparing step comprises generating first and second voltages corresponding to said first and second differential current signals, and comparing said voltages to generate said feedback signal.